

AMENDMENTS TO THE CLAIMS:

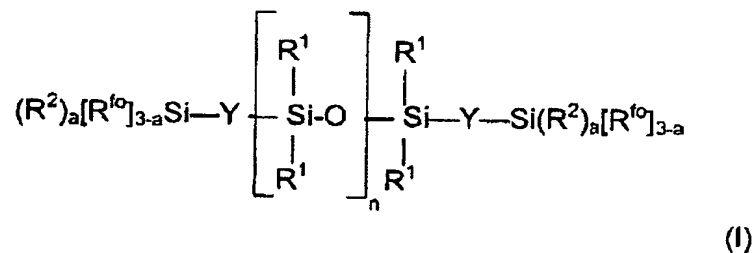
This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-10. (Canceled)

11. (New) A single-component polyorganosiloxane composition (POS) which is stable on storage in the absence of moisture and which crosslinks in the presence of water to give a non-yellowing and adherent elastomer, said composition comprising:

(i) at least one crosslinkable linear polyorganopolysiloxane A of formula:



in which:

the substituents R^1 , which may be identical or different, are each a saturated or unsaturated, substituted or unsubstituted, aliphatic, cyclanic or aromatic, C_1 to C_{13} monovalent hydrocarbon radical;

the substituents R^2 , which may be identical or different, are each a saturated or unsaturated, substituted or unsubstituted, aliphatic, cyclanic or aromatic, C_1 to C_{13} monovalent hydrocarbon radical;

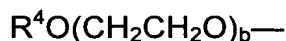
the functionalization substituents R^{fo} , which may be identical or different, each represent:

an iminoxy residue of formula:



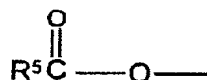
wherein R^3 independently is a linear or branched C_1 to C_8 alkyl radical, a C_3 to C_8 cycloalkyl radical or a C_2 - C_8 alkenyl radical;

an alkoxy residue of formula:



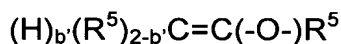
wherein R^4 independently is a linear or branched C_1 to C_8 alkyl radical or a C_3 to C_8 cycloalkyl radical and $b = 0$ or 1 ;

an acyloxy residue of formula:



R^5 is a saturated or unsaturated, substituted or unsubstituted, aliphatic, cyclanic or aromatic, C_1 to C_{13} monovalent hydrocarbon radical;

an enoxy residue of formula:



wherein R^5 is as defined above and $b' = 0, 1$ or 2 ;

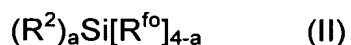
each symbol Y represents an oxygen atom or a divalent hydrocarbon radical;

\underline{n} has a value sufficient to confer, on the POS A, a dynamic viscosity at 25°C ranging from 1000 to 1,000,000 mPa·s;

\underline{a} is zero or 1 ;

(2i) optionally, at least one polyorganosiloxane resin B functionalized by at least one radical R^{fo} as defined above and having in its structure, at least two different siloxyl units selected from among those of formulae $(R^1)_3SiO_{1/2}$ (M unit), $(R^1)_2SiO_{2/2}$ (D unit), $R^1SiO_{3/2}$ (T unit) and SiO_2 (Q unit), at least one of these units being a T or Q unit, the radicals R^1 , which may be identical or different, are as defined above with respect to the formula (I), said resin having a content by weight of functional radicals R^{fo} ranging from 0.1 to 10%, with the proviso that a portion of the radicals R^1 are radicals R^{fo} ;

(3i) optionally, at least one crosslinking agent C of formula:

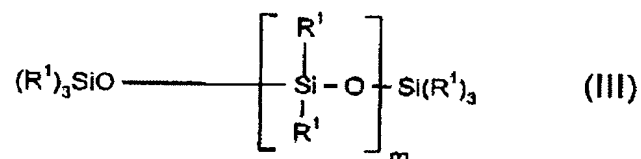


wherein R^2 , R^{fo} and a are as defined above;

(4i) optionally, a residual amount of the functionalization catalyst D in the presence of which the preparation of the POS(s) A and of the optional resin(s) B which are functionalized by R^{fo} occurs;

(5i) optionally, at least one primary aliphatic C_1 to C_3 alcohol E;

(6i) optionally, at least one unreactive linear polydiorganosiloxane F which is not functionalized by R^{fo} and which has the formula:



in which:

the substituents R^1 , which may be identical or different, are as defined above for the polyorganosiloxane A of formula (I);

\underline{m} has a value sufficient to confer, on the polymer of formula (III), a dynamic viscosity at 25°C ranging from 10 to 200,000 mPa·s;

- (7i) at least one inorganic filler G;
- (8i) optionally, at least one auxiliary agent H;
- (9i) an effective amount of a crosslinking/curing catalyst I; said composition further comprising the following parameters (α), (β) and (γ):

(α) the curing catalyst I comprises the combination of at least one organic derivative I1 of a metal M1 selected from among titanium, zirconium and mixtures thereof with at least one organic derivative I2 of a metal M2 selected from among zinc, aluminum, boron, bismuth and mixtures thereof;

(β) the number of $\mu\text{g.at}$ (microgram atoms) of the metals M1 + M2 introduced into 1 g of single-component composition comprising all the ingredients (i) to (8i) is within the range from 1 to 150;

(γ) the ratio:

$$\frac{\text{number of } \mu\text{g.at of M2}}{\text{total number of } \mu\text{g.at of M1 + M2}} \times 100$$

is within the range from 5 to 95%.

12. (New) The single-component polyorganosiloxane (POS) composition as defined by Claim 11, wherein the amount of curing catalyst I is such that:

(β) the number of $\mu\text{g.at}$ (microgram atoms) of the metals M1 + M2 introduced into 1 g of single-component composition comprising all the ingredients (i) to (8i) is within the range from 25 to 55;

(γ) the ratio:

$$\frac{\text{number of } \mu\text{g.at of M2}}{\text{total number of } \mu\text{g.at of M1 + M2}} \times 100$$

is within the range from 10 to 45%.

13. (New) The single-component polyorganosiloxane (POS) composition as defined by Claim 11, wherein:

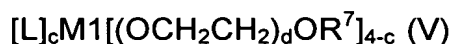
the POS A is a polymer of formula (I) in which the symbol Y represents an oxygen atom;

the functionalization substituents R^{fo} of the ingredients A, B and C are of alkoxy type and correspond to the formula $R^4O(CH_2CH_2O)_b-$ as defined above; and

the crosslinking/curing catalyst I comprises a combination:

of at least one organic derivative I1 of a metal M1 selected from the group consisting of:

monomers I1.1 of formula:



in which:

the symbol L represents a σ donor ligand, with or without π participation;

c represents 0, 1, 2, 3 or 4;

M1 is a metal selected from among titanium, zirconium and mixtures thereof;

the substituents R^7 , which may be identical or different, are each a linear or branched C_1 to C_{12} alkyl radical;

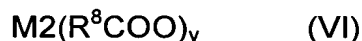
d represents zero, 1 or 2;

with the proviso that, when the symbol \underline{d} represents zero, the alkyl radical R^7 has from 2 to 12 carbon atoms and, when the symbol \underline{d} represents 1 or 2, the alkyl radical R^7 has from 1 to 4 carbon atoms;

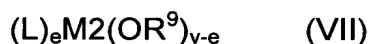
polymers I1.2 resulting from the partial hydrolysis of the monomers of formula (V) in which the symbol \underline{c} is at most equal to 3 and the symbol R^7 is as defined above with the symbol \underline{d} representing zero; with

at least one organic derivative I2 of a metal M2 selected from the group consisting of:

the polycarboxylates I2.1 of formula:



the metal alkoxides and chelates I2.2 of formula:



in which formulae:

the substituents R^8 , which may be identical or different, are each a linear or branched C_1 to C_{20} alkyl radical;

the symbol R^9 is as defined above in the formula (V) for R^7 ;

the symbol L represents a σ donor ligand, with or without π participation;

M2 is a metal of valency \underline{v} selected from among zinc, aluminum, bismuth, boron and their mixtures;

\underline{e} represents a number ranging from zero to \underline{v} .

14. (New) The single-component polyorganosiloxane (POS) composition as defined by Claim 11, wherein the substituents R^1 of the polymers POS A

functionalized by R^{fo} , of the optional resins B functionalized by R^{fo} and of the optional non-functionalized polymers F are selected from the group consisting of:

alkyl and haloalkyl radicals having from 1 to 13 carbon atoms,
cycloalkyl and halocycloalkyl radicals having from 5 to 13 carbon atoms,
alkenyl radicals having from 2 to 8 carbon atoms,
mononuclear aryl and haloaryl radicals having from 6 to 13 carbon atoms, and
cyanoalkyl radicals, the alkyl moieties of which have from 2 to 3 carbon atoms.

15. (New) The single-component polyorganosiloxane (POS) composition as defined by Claim 11, comprising a crosslinking silane C carrying the functionalization radicals R^{fo} : $Si(OC_2H_5)_4$, $CH_3Si(OCH_3)_3$, $CH_3Si(OC_2H_5)_3$, $(C_2H_5O)_3Si(OCH_3)$, $(CH_2=CH)Si(OCH_3)_3$ or $(CH_2=CH)Si(OC_2H_5)_3$.

16. (New) A process for the preparation of the single-component polyorganosiloxane (POS) composition as defined by Claim 11, carried out in apparatus, operating batchwise or continuously, whereby:

intimately mixing, with the exclusion of moisture:

in a stage 1, the following constituents: precursor POS A' or A'' of the POS A functionalized by R^{fo} , precursor resin B' or B'' (optional) of the resin POS B functionalized by R^{fo} , silane, optionally olefinic, carrying the functional groups R^{fo} (which can be the silane C), functionalization catalyst D, alcohol E (optional) and non-functionalized and unreactive POS F (optional);

then, in a stage 2, the reaction mixture from stage 1 supplemented by the addition of the constituents G, H (optional), F (optional) and I; and

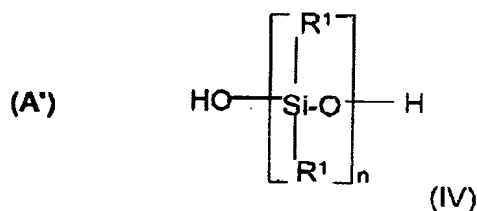
discharging the volatile materials present at various points over the course of the process:

during the abovementioned stage 1 and/or

during the abovementioned stage 2 and/or

in a final stage 3.

17. (New) The process as defined by Claim 16, wherein the hydroxylated precursor A' of the POS A functionalized by R^{fo} at the chain ends is an α,ω -hydroxylated polydiorganosiloxane of formula:



wherein R¹ and n being as defined in the formula (I).

18. (New) The process as defined by Claim 16, wherein the hydroxylated precursor B' of the optional resin POS B functionalized by R^{fo} corresponds to the above definition for B, except that a portion of the radicals R¹ are OH groups.

19. (New) The process as defined by Claim 16, including a functionalization catalyst D selected from the group consisting of the following compounds:

potassium acetate,
various inorganic oxides,
carbarnates,
lithium hydroxide,
sodium hydroxide or potassium hydroxide.

20. (New) A non-yellowing elastomer capable of adhering to various substrates and obtained by crosslinking and curing the single-component silicone mastic composition as claimed in Claim 11.